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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/889,181	07/09/2001	Gerhard Neubauer	01-409	8516
7590		10/08/2003	EXAMINER	
Bachman & LaPointe		MUSSEY, BARBARA J		
Suite 1201		ART UNIT		
900 Chapel Street		PAPER NUMBER		
New Haven, CT 06510-2802		1733		

DATE MAILED: 10/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/889,181

Applicant(s)

NEUBAUER ET AL.

Examiner

Barbara J. Musser

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what is meant by cardanically in line 16 as the term cannot be found in a dictionary. This is assumed to mean the extruders are located vertically above the production line attached to the vertical supports. It is suggested this be removed from the claim. It is unclear what is meant by the extruders facing each other in line 11. This is assumed to be the extruders are on either side of the extrusion head such that the polymer streams exiting the extruders flow towards each other. It is suggested this be removed from the claim.

Regarding claim 2, it is unclear whether the y or z direction is in a plane parallel to the ground. It is unclear how "with respect to the extrusion head" defines a direction as the claims do not indicate the orientation of the extrusion head and from the figures, the primary axis of the extrusion head appears to be that of the production line.

Claim 17 recites the limitation "the metal strip unwinding device" in line 4. Claim 17 recites the limitation "the metal strip storage device" in line 5. Claim 17 recites the limitation "the optical monitoring device" in line 6. Claim 17 recites the limitation "the printer" in line 7. Claim 17 recites the limitation "the tube draw-off device" in line 7.

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Claim 17 recites the limitation "the tube winding device" in lines 7-8. There is insufficient antecedent basis for this limitation in the claim. This claim appears to be intended to be dependent from a combination of claims 10 and 15.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moller(GB 2193463A) in view of Barnoach(U.S. Patent 4,911,778)

Moller discloses an apparatus for forming a metal strip into a tube wherein the strip is shaped using a shaping device, two inner and two outer layers of polymer are extruded onto the tube, and the tube is welded shut.(Figures 1 and 2) There can be four extruders, one for an outer layer, two for inner layers, and one forming layers on both the inner and outer surface of the metal strip.(Figure 2; Pg. 4, ll. 28-35) Therefore there are two extruders forming inner layers and two extruders forming outer layers. It is noted that the claim is not limited to only two extruders forming the inner layers.

The reference does not disclose a cooling device for the formed tube. Barnoach discloses an apparatus for forming tubes from metal strips with extruded polymer inner and outer layers wherein the formed tube is cooled after extrusion.(Figure 2) It would have been obvious to one of ordinary skill in the art at the time the invention was made to cool the formed tube using water since this would cool the tube quickly and would

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allow detection of poor welds via air escaping into the bath from the tube.(Col. 5, ll. 1-13)

As seen in Figure 2, the extrusion head is between the extruders. Since the extruders are on either side of the extrusion head, it is considered that the extruders are facing each other. While the reference does not specifically disclose the extruders are located on stationary support columns, they are stationary and are supported such that they do not collapse. Therefore one in the art would appreciate that structures of some sort such as columns would be used to keep the extruders in their designated location.

While the extruders for the outer and inner layers are not in mutual alignment, one in the art would appreciate that both extruders could be placed on the same side of the tube if so desired, for example so that the extruders are not working against the force of gravity. Only the expected results would be achieved.

Regarding claim 2, Barnoach discloses a welding device which is movable in the y and z direction and is pivotable about the x-axis.(Figure 3, Col. 3, ll. 3-5) From the angle of the device to the production line, it is clear the device is pivotable about the x-axis. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the welding device of Barnoach in the tube forming apparatus of Moller and Barnoach since this would allow easy access to the equipment and since Barnoach teaches it as an alternative to the fixed welder of Moller. While the welder is not disclosed as capable of movement in the x-direction, one in the art would appreciate that it would be movable in the x-direction so it could be positioned precisely where it was desired.

Regarding claim 8, Moller discloses a strip unwinding device upstream of the shaping device.(Figure 1) One in the art would appreciate that it would be movable in the y direction so that the device could be aligned properly with the down stream station when using wider or narrower strips of metal when more overlap or less is desired.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Moller and Barnoach as applied to claim 1 above, and further in view of Roscoe et al.(U.S Patent 3,478,974).

The references cited above do not disclose a roll stand having two rolls at opposite ends which is pivotable about a central axis. Roscoe et al. discloses a roll stand having two rolls at opposite ends which is pivotable about a central axis so that one roll can be replaced while the other roll is in use, decreasing down time.(Col. 1, ll. 21-24) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the roll stand of Roscoe et al. in the apparatus of Moller and Barnoach since it would allow replacement of the metal strip roll while the apparatus remains in use.(Col. 1, ll. 21-24)

6. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moller and Barnoach as applied to claim 1 above, and further in view of Iida(U.S. Patent 4,838,526).

The references cited above discloses the cooling bath being elongate, but do not disclose the specifics of the contents on the bath. Iida discloses a water bath with water jets and a hold down device so that the material is cooled as quickly as possible and a smaller cooling tank is used.(Col. 2, ll. 8-10; Figure 1) While Iida discloses an

approximately 180 degree turn in the cooled material, one in the art would appreciate that a tube having steel reinforcement would be damaged by such an abrupt change in direction. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use water jets and hold-down devices to cool the tube of Moller and Barnoach since this would allow use of a smaller cooling tank. One in the art would appreciate that a 180 degree turn in the product could damage the product and would use multiple hold down devices to keep the tube in the cooling water while not damaging it.

Regarding claim 13, Iida discloses using a roll as a hold-down device.

7. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moller and Barnoach as applied to claim 1 above, and further in view of Palmer(U.S Patent 5,580,405) and Oresti et al.(U.S Patent 5,223,852).

While Moller and Barnoach disclose a tube draw-off device and a winding device(Barnoach, Figure 3) but do not disclose a printer or an optical monitoring device. Palmer discloses a camera which is used to detect problems in the final product.(Col. 19, ll. 31-42) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a camera to photograph the tube of Moller and Barnoach since such cameras are often used to detect problems in the final product so that upstream production can be modified.(Col. 19, ll. 31-42)

The references also do not disclose a printer. It is well-known to print information such as manufacturer and product specifications on an extruded product as shown for example by Oresti et al. which discloses printing information onto a tube.(Col. 1, ll. 8-13)

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a printer in the apparatus of Moller, Barnoach, and Palmer since this would allow printing of product specifications and logos as is well-known and conventional in the art as shown for example by Oresti et al.

Regarding claim 16, while Palmer discloses only one camera, one in the art would appreciate that using only one camera would not provide clear images of the portions of the pipe surface parallel to the camera and therefore would use multiple cameras to insure the entire surface of the pipe was examined for problems.

Allowable Subject Matter

8. Claims 4-7, 10, 11, 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: regarding claims 4 and 5, the prior art of record does not teach or fairly suggest the closing devices for the metal strip being made of more than two adjoining rollers. Regarding claims 6 and 7, the prior art of record does not teach or fairly suggest the base of the shaping device being movable in the y and z direction and pivotable about axes in the y and z directions. Regarding claims 10, 11, and 17, the prior art of record does not teach or fairly suggest a metal strip storage device between the metal strip unwinding device and the metal strip shaping device. Regarding claim 14, the prior art of record does not teach or fairly suggest a tube clamping off device reciprocable

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along the bath with squeeze off jaws that that close at the beginning of the bath and open at the end.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Barbara J. Musser** whose telephone number is **(703)-305-1352**. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on 703-308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.


BJM


JEFF H. AFTERGUT
PRIMARY EXAMINER
GROUP 1300